

ASBESTOS-RELATED DISEASES FROM ENVIRONMENTAL EXPOSURE TO CROCIDOLITE IN DA-YAO, CHINA II. A CASE-CONTROL STUDY OF MESOTHELIOMA Chi Pang Wen, MD, Dr.P.H^{1,*} Shan Pou Tsai, Ph.D¹ Suqiong Luo, MD² Jing Tao Wang² *National Health Research Institute, Taipei, Taiwan¹ West China University School of Public Health, Chengdu, China²*

Objectives: Scattered patches of crocidolite, one form of asbestos, were found in the surface soil in a rural community of Da-yao, located in southwestern part of China. From an earlier clinical survey and cohort study, we reported an extraordinary number of mesothelioma cases. To ascertain the presence of dose response relationship between exposure intensity or duration and the development of mesothelioma, a case control study design was undertaken.

Methods: Thirty-four cases of mesothelioma were identified from the hospital records, of which 23 could be interviewed in the follow up effort. By matching these cases for age, sex and residence, 30 controls were selected from the same hospital patients, by excluding those with cancer, respiratory diseases or unknown diagnosis.

Estimates for various exposure intensities were made for environmental exposures in the different time periods based on the extent of excavation and stove making going on at the time. In the few instances where high exposure in stove-making settings occurred, actual measurements made in simulated environments were used. The cumulative exposure index was the product of the number of years in residence and exposure density at that time.

Results: Mesothelioma cases were significantly associated with higher cumulative exposure index. In addition, there seems to be a dose-response relationship between time-adjusted cumulative exposure intensity and the development of mesothelioma, after a latency of an average of 50 years.

Smoking was not a significant risk factor, either based on pack-years or history alone, but cancer in the immediate family was for mesothelioma.

Conclusion: Environmental crocidolite exposure is associated with mesothelioma and a dose response relationship between the lifetime exposure and the development of mesothelioma was found.